

REMARKS

This application contains claims 10 through 23. All claims are now directed specifically to a method of lubricating the crankcase of a four stroke medium speed compression-ignited marine engine using a defined, dispersant-free lubricating oil composition.

Claims 10 through 23 were rejected under 35 USC Section 112, first paragraph, for failing to comply with the written description requirement. Specifically, it was alleged that the amendment to the claims presented in the Preliminary Amendment filed February 24, 2005 introduced new matter into the application as it was not shown where the Specification supported the description of the addition of the claimed lubricating oil compositions to the crankcase of a trunk piston engine. Applicants concede that the Specification does not expressly use the term "crankcase". However, the Specification clearly supports the act of lubricating a four-stroke medium speed compression-ignited trunk-piston marine engine. As would be understood by one of ordinary skill in the art, with such engines, lubricants are not added to the engine fuel (as in two-stroke, cross-head engines). The only lubricant added to such a four-stroke engine is a crankcase lubricant. Therefore, the Specification inherently supports the terms of amended claim, and applicants submit that the Section 112 amendment should be withdrawn.

Claims 10 through 23 were further rejected under 35 USC Section 103(a) for being unpatentable over U.S. Patent No. 4,283,294 to Clarke (hereinafter referred to as "the Clarke patent"); or U.S. Patent No. 6,114,288 to Fujitsu et al. (hereinafter referred to as "the Fujitsu et al. patent").

As was previously argued, the Clarke patent is directed to marine diesel cylinder lubricants (MDCL) which, in two-stroke engines, are added to a diesel fuel and burned together with the fuel in operation of the engine. The crankcases of such two stroke engines are lubricated separately with a "system" oil. As would be known to those skilled in the art, system oils have invariably contained a dispersant, and have a relatively low TBN (since the bulk of the acid neutralization function is provided by the extremely high TBN cylinder lubricant). On the other hand, one skilled in the art would recognize that, as a cylinder lubricant for a two stroke engine is burned with the fuel there is no need for a dispersant that maintains sludge and asphaltenes in suspension within the oil since the oil is not continuously recirculated through the engine. One skilled in the art would further understand that cylinder lubricants have a function that differs from that of crankcase lubricants and would not be led to add a cylinder lubricant to an engine crankcase absent a specific teaching that a cylinder lubricant was also suitable for use as a crankcase lubricant. The Clarke et al. patent contains

no such suggestion and, therefore, the Clarke patent does not render obvious the presently claimed method for lubricating the crankcases of four stroke marine diesel engines.

Further, the Clarke patent does not differentiate between carboxylate detergents and other detergents, such as phenates and sulfonates and, thus, further fails to suggest the very crux of the invention, which is that at high TBN levels, the use of a carboxylate detergent causes asphaltenes to be maintained in suspension within a crankcase lubricating oil in the absence of conventional dispersants. The exemplified lubricants of the Clarke et al. patent all use phenate detergents. Therefore, the Clarke patent fails to render obvious the presently claimed method under Section 103.

The Fujitsu et al. patent, as was also previously argued, is directed to lubricating oil compositions for passenger cars, and not to lubricants for marine diesel engines. This argument was rebuffed on the premise that there is nothing in the Fujitsu et al. patent that restricts the use of the lubricants described therein. Applicants submit, however, that the question is not whether one could possibly formulate a lubricant within the broad teaching of the Fujitsu et al. patent and use it in the method of the present claims, but whether the disclosure of the Fujitsu et al. patent would lead one of ordinary skill in the art to do so.

Applicants submit that one of ordinary skill in the art would immediately recognize that the Fujitsu et al. patent is directed to lubricants for passenger cars. The high temperature high shear (HTHS) viscosity limit on the lubricants of the Fujitsu et al. patent requires a multigrade oil. Passenger car motor oils are multigrade. Marine Trunk Piston Engine Oils (TPEOs) are not. The numerical HTHS limits of the Fujitsu et al. patent expressly limit the lubricants described therein to 5W20 grade lubricants. TPEO compositions, in addition to being single grade, are more viscous than 20 Grade (e.g., are 30 or 40 grade oils). The Fujitsu et al. patent includes no description of high-TBN lubricants and the exemplified lubricants all have TBNs typical of passenger car motor oils (e.g., the 7.8 TBN lubricant of Example 1 or the 7.22 TBN lubricant of Example 2). TPEO compositions, on the other hand, are high TBN compositions and the present claims require a minimum TBN of 25. In testing the lubricants disclosed, the Fujitsu et al. patent references an industry standard test for wear, JASO M328-95, which is a test for passenger car motor oils and not TPEO compositions. In addition to viscosity modifiers, the Fujitsu et al. patent also describes as suitable additives, pour point depressants and friction modifiers, which are also not conventionally used in TPEO compositions. Thus, contrary to the position taken by the Office, Applicants submit that it is abundantly clear that the

Fujitsu et al. patent is directed specifically to passenger car motor oils and that this would be immediately recognized by one of ordinary skill in the art.

More importantly, like the Clarke et al. patent, the Fujitsu et al. patent, even if considered by one of ordinary skill in the art, would still fail to suggest the presently claimed method. Commercialized marine diesel engine lubricants, as well as passenger car lubricants have conventionally contained dispersants. The use of lubricating oil dispersants are particularly necessary in marine diesel lubricants because of the low quality fuels usually associated with such engines, which fuels contain asphaltenes that contaminate the lubricant via blow-by gasses. The fact that, in describing dispersants; which are not germane to the invention claimed therein, the Fujitsu et al. patent uses language that could be construed to mean that the dispersant was optional, would not lead one skilled in the art to attempt to operate a marine diesel engine with a lubricant containing no dispersant. Passenger car motor oils, and TPEOs, conventionally contain dispersant. The Fujitsu et al. patent does not explicitly state that any useable lubricants free from dispersant could be formed and, all exemplified materials of the Fujitsu clearly contain dispersant (see description of "other additives"). Specifically, the exemplified materials of the Fujitsu et al. patent all contain 8.3 wt. % of "additives", which are defined as ash-free dispersant, pour point depressant and antifoaming agent. Passenger car motor oils contain only small amounts of pour point depressant, such as 0.2 to 0.6 wt. % (TPEO does not conventionally contain pour point depressant) and antifoamant, such as 0.001 or 0.002 wt. %. This means that the exemplified materials of the Fujitsu et al. patent contain from 7.7 to 8.1 wt. % of dispersant.

In view of the long standard practice of using dispersants, the fact that the exemplified materials of the patent all contain dispersant, and the lack of any express teaching that dispersants are not required, applicants believe it to be clear that one skilled in the art would not be led by the disclosure of the Fujitsu et al. patent to formulate a dispersant-free lubricating oil composition, particularly a dispersant-free lubricating oil composition for use as a TPEO. Further, the invention is directed to the discovery that the use of high TBN lubricants containing only carboxylate detergents allows for the suspension of asphaltenes in the absence of dispersant. Such an invention is clearly not suggested by the Fujitsu et al. patent which fails to describe (1) an environment in which asphaltenes contaminate the lubricant, or (2) a high TBN (at least 25) lubricant. Thus, applicants submit that the Fujitsu et al. patent also fails to render obvious the amended claims of this application under Section 103.

For the reasons set forth above, applicants believe that the cited prior art references fail to fairly suggest the method now claimed. Therefore, applicants respectfully request that all rejections presented under Section 103 be withdrawn and the above-identified patent application now be passed to issue.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jacob M. Levine". The signature is fluid and cursive, with the first name "Jacob" being the most prominent.

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